

## PATENT COOPERATION TREATY

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## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

REC'D 15 SEP 2004

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(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 60285-PCT1	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/US03/20114	International filing date (day/month/year) 25 June 2003 (25.06.2003)	Priority date (day/month/year) 26 June 2002 (26.06.2002)

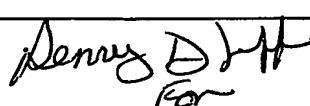
International Patent Classification (IPC) or national classification and IPC

IPC(7): C02F 1/72 and US CL.: 210/759, 763, 747, 908; 405/128.75

Applicant

FMC CORPORATION

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of <u>3</u> sheets, including this cover sheet.
<input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
These annexes consist of a total of <u>  </u> sheets.
3. This report contains indications relating to the following items:
I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of report with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application

Date of submission of the demand 21 January 2004 (21.01.2004)	Date of completion of this report 31 August 2004 (31.08.2004)
Name and mailing address of the IPEA/US Mail Stop PCT, Attn: IPEA/ US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230	Authorized officer Frank M. Lawrence Telephone No. 571-272-0987 

Form PCT/IPEA/409 (cover sheet)(July 1998)

**I. Basis of the report**

## 1. With regard to the elements of the international application:\*

 the international application as originally filed. the description:

pages 1-27 as originally filed

pages NONE, filed with the demandpages NONE, filed with the letter of \_\_\_\_\_ the claims:

pages 28 and 29, as originally filed

pages NONE, as amended (together with any statement) under Article 19pages NONE, filed with the demandpages NONE, filed with the letter of \_\_\_\_\_ the drawings:pages NONE, as originally filedpages NONE, filed with the demandpages NONE, filed with the letter of \_\_\_\_\_ the sequence listing part of the description:pages NONE, as originally filedpages NONE, filed with the demandpages NONE, filed with the letter of \_\_\_\_\_

## 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

 the language of a translation furnished for the purposes of international search (under Rule 23.1(b)). the language of publication of the international application (under Rule 48.3(b)). the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

## 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

 contained in the international application in printed form. filed together with the international application in computer readable form. furnished subsequently to this Authority in written form. furnished subsequently to this Authority in computer readable form. The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished. The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.4.  The amendments have resulted in the cancellation of: the description, pages NONE the claims, Nos. NONE the drawings, sheets/fig NONE5.  This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

**V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. STATEMENT**

Novelty (N)	Claims <u>6-8, 13-17</u>	YES
	Claims <u>1-5, 9-12</u>	NO
Inventive Step (IS)	Claims <u>NONE</u>	YES
	Claims <u>1-17</u>	NO
Industrial Applicability (IA)	Claims <u>1-17</u>	YES
	Claims <u>NONE</u>	NO

**2. CITATIONS AND EXPLANATIONS**

In the response to the written opinion, applicant argues that the cited references do not disclose or suggest the present method or three component compositions used in the method, however it is submitted that the references disclose the methods and compositions as discussed below.

Claims 1-3 and 9-12 lack novelty under PCT Article 33(2) as being anticipated by US 5,741,427 (WATTS et al). WATTS et al teaches a method for the remediation of soil or groundwater comprising adding a peroxide and a Fe(II) EDTA chelate or Fe(III) salt to remove pesticides and other contaminants (see abstract, col. 3, lines 30-46, col. 4, lines 12-51, claims 1, 3).

Claims 1-5, 9 and 16 lack novelty under PCT Article 33(2) as being anticipated by US 5,700,107 (NEWTON). NEWTON teaches a method of soil remediation comprising adding a complexing agent that includes a chelating agent, a salt of iron, and a persulfate such as sodium persulfate to remove pesticides and other contaminants (abstract, col. 1, lines 52-67, col. 2, lines 24-49, col. 4, lines 1-16).

Claims 6-8 and 13-15 lack an inventive step under PCT Article 33(3) as being obvious over NEWTON. NEWTON discloses all of the limitations of the claims except that the peroxygen compound is a sodium or potassium monopersulfate or a combination of di-and monopersulfate, and that preferred amounts of chelating agent and peroxygen compounds are used. It is submitted that one having ordinary skill in the art would know to use any available persulfate that is known in the art to be capable of oxidizing contaminants in soil based on the teaching of sodium persulfate in the patent. Also, the amounts of peroxygen and chelating agents are considered to be parameters that would have been routinely optimized by one having ordinary skill in the art at the time of the invention based the nature of contamination and the desired level of decontamination.

Claim 17 lacks an inventive step under PCT Article 33(3) as being obvious over NEWTON in view of US 6,019,548 A (HOAG et al). NEWTON discloses all of the limitations of the claim except that the chelating agent, transition metal, and peroxygen compound are added sequentially. HOAG et al teach an in situ treatment method for soil remediation, comprising adding permanganate and persulfate to the soil either sequentially or together as an aqueous solution. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of NEWTON by adding the components sequentially in order to provide a method of treatment in the situation where a premix is costly or not readily available.

Claims 1-17 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.

**----- NEW CITATIONS -----**